

AMENDMENTS TO THE CLAIMS

1. (currently amended) A process for generating an intermediate laminated product in an aluminum alloy of the Al-Zn-Mg type, said process consisting of:

a) generating a plate by semi-continuous casting, the plate containing (in percentages per unit mass):

Mg 0.5 – 2.0 Mn < 1.0 Zn 3.0 – 9.0 Si < 0.50

Fe < 0.50 Cu < 0.50 Ti < 0.15 Zr < 0.20

the remainder aluminum with inevitable impurities, in which $Zn/Mg > 1.7$;

b) subjecting said plate to homogenization or reheating to a temperature T_1 , selected so that $500^{\circ}\text{C} \leq T_1 \leq (T_s - 20^{\circ}\text{C})$, where T_s is the alloy burning temperature,

c) conducting an initial hot-rolling step including one or more roll runs on a hot rolling mill, an input temperature T_2 of the initial hot rolling step being selected such that $(T_1 - 60^{\circ}\text{C}) \leq T_2 \leq (T_1 - 5^{\circ}\text{C})$, and the rolling process being conducted in such a way that the output temperature T_3 is such that $(T_1 - 150^{\circ}\text{C}) \leq T_3 \leq (T_1 - 30^{\circ}\text{C})$ and $T_3 \leq T_2$;

d) cooling a strip emerging from said initial hot-rolling step to a temperature T_4 ;

e) conducting a second hot-rolling step on said strip at an input temperature T_5 , the input temperature T_5 being selected such that $T_5 \leq T_4$ and $200^{\circ}\text{C} \leq T_5 \leq 300^{\circ}\text{C}$, and the second hot-rolling process being conducted in such a way that the coiling temperature T_6 is such that $(T_5 - 150^{\circ}\text{C}) \leq T_6 \leq (T_5 - 20^{\circ}\text{C})$

f) optionally conducting at least a cold-rolling, aging treatment, and/or cutting operation,

wherein the yield strength $R_{p0.2}$ of said laminated product is at least 250 Mpa, the fracture strength R_m of said laminated product is at least 280 MPa, and the elongation at fracture of said laminated product is at least 8%.

2. (previously presented) A process according to claim 1, wherein the zinc content of the alloy is between from 4.0 to 6.0%, the Mg content is from 0.7 to 1.5%, and the Mn content is less than 0.60%.

3. (previously presented) A process according to claim 2, wherein $\text{Cu} < 0.25\%$.
4. (previously presented) A process according to claim 2, wherein the alloy is selected from the group consisting of alloys 7020, 7108, 7003, 7004, 7005, 7008, 7011, and 7022.
5. (currently amended) A process for generating an intermediate laminated product in an aluminum alloy of the Al-Zn-Mg type, said process consisting of:

a) generating a plate by semi-continuous casting, the plate containing (in percentages per unit mass):

Mg 0.5 – 2.0 Mn < 1.0 Zn 3.0 – 9.0 Si < 0.50
Fe < 0.50 Cu < 0.50 Ti < 0.15 Zr < 0.20, and at least one element
selected from the group consisting of Sc, Y, La, Dy, Ho, Er, Tm, Lu, Hf, and Yb with a
concentration not exceeding the following values:

Sc < 0.50%,

Y < 0.34%,

La, Dy, Ho, Er, Tm, Lu < 0.10% each,

Hf < 1.20%

Yb < 0.50%.

the remainder aluminum with inevitable impurities, in which $\text{Zn/Mg} > 1.7$;

b) subjecting said plate to homogenization or reheating to a temperature T_1 , selected so that $500^\circ\text{C} \leq T_1 \leq (T_s - 20^\circ\text{C})$, where T_s is the alloy burning temperature,

c) conducting an initial hot-rolling step including one or more roll runs on a hot rolling mill, an input temperature T_2 of the initial hot rolling step being selected such that $(T_1 - 60^\circ\text{C}) \leq T_2 \leq (T_1 - 5^\circ\text{C})$, and the rolling process being conducted in such a way that the output temperature T_3 is such that $(T_1 - 150^\circ\text{C}) \leq T_3 \leq (T_1 - 30^\circ\text{C})$ and $T_3 \leq T_2$;

d) cooling a strip emerging from said initial hot-rolling step to a temperature T_4 ;

e) conducting a second hot-rolling step on said strip at an input temperature T_5 , the input temperature T_5 being selected such that $T_5 \leq T_4$ and $200^\circ\text{C} \leq T_5 \leq 300^\circ\text{C}$, and the second hot-rolling process being conducted in such a way that the coiling temperature T_6 is such that $(T_5 - 150^\circ\text{C}) \leq T_6 \leq (T_5 - 20^\circ\text{C})$

f) optionally conducting at least a cold-rolling, aging treatment, and/or cutting

operation,

wherein the yield strength $R_{p0.2}$ of said laminated product is at least 250 Mpa, the fracture strength R_m of said laminated product is at least 280 MPa, and the elongation at fracture of said laminated product is at least 8%.

~~according to any one of claim 1, wherein the alloy additionally contains one or more elements selected from the group consisting of Se, Y, La, Dy, Ho, Er, Tm, Lu, Hf, and Yb with a concentration not exceeding the following values:~~

~~——— $Se < 0.50\%$,~~

~~——— $Y < 0.34\%$,~~

~~——— $La, Dy, Ho, Er, Tm, Lu < 0.10\%$ each,~~

~~——— $Hf < 1.20\%$~~

~~——— $Yb < 0.50\%$.~~

6. (currently amended) A process according to claim 1 ~~to 5~~, wherein said intermediate laminated product has a thickness from 3 mm to 12 mm.

7. (previously presented) A process according to claim 1, wherein said intermediate laminated product is subjected to cold working reduction from 1% to 9%, and/or to an additional heat treatment including one or more points at temperatures between from 80°C to 250°C, said additional heat treatment being able to occur before, after or during said cold working.

8. (previously presented) A process according to claim 1, wherein the temperature T_3 is such that $(T_1 - 100^\circ\text{C}) \leq T_3 \leq (T_1 - 30^\circ\text{C})$ and/or the temperature T_2 is such that $(T_1 - 30^\circ\text{C}) \leq T_2 \leq (T_1 - 5^\circ\text{C})$.

9. (previously presented) A process according to claim 1, wherein the temperature T_3 is greater than a solvus temperature of the alloy.

10. (previously presented) A process according to claim 1, wherein the alloy is a 7108 alloy and the temperatures T_1 to T_6 are respectively $T_1 = 550^\circ\text{C}$, $T_2 = 540^\circ\text{C}$, $T_3 = 490^\circ\text{C}$,

$T_4 = 270^{\circ}\text{C}$, $T_5 = 270^{\circ}\text{C}$, $T_6 = 150^{\circ}\text{C}$.

11. (withdrawn and currently amended) A product which can be obtained via [[the]] a process according to claim 1 wherein the yield strength $R_{p0.2}$ of said product is at least 250 Mpa, the fracture strength R_m of said product is at least 280 MPa, and the elongation at fracture of said product is at least 8%.

12. (withdrawn) A product according to claim 11, wherein the yield strength $R_{p0.2}$ is at least 290 MPa and the fracture strength R_m is at least 330 MPa.

13. (withdrawn and currently amended) A product according to claim 11, wherein the zinc content thereof is from 4.0 to 6.0%, the Mg content is ~~between~~ from 0.7 [[and]] to 1.5%, and the Mn content is not more ~~less~~ than 0.60%.

14. (withdrawn and currently amended) A product according to claim 13, wherein the copper content thereof is not more ~~less~~ than 0.25%.

15. (withdrawn and currently amended) A product according to claim 13, wherein the width of the precipitation-free zones at the grain boundaries thereof is at least ~~more than~~ 100 μm .

16. (withdrawn and currently amended) A product according to claim 15, wherein MgZn_2 type precipitations at the grain boundaries have an average size of at least ~~more than~~ 150 nm.

17. (withdrawn and currently amended) A product according to claim 11, wherein said product has a fibrous structure with grains exhibiting in the short-transverse direction a thickness of not more ~~less~~ than 30 μm .

18. (withdrawn and currently amended) A product according to claim 17, wherein said product has a fibrous structure having a thickness/length of grains ratio of at least ~~more than~~ 60.

19. (withdrawn) A welded construction comprising a product of claim 11.
20. (withdrawn) A tanker comprising a product of claim 11.
21. (withdrawn) An industrial vehicle comprising a product according to claim 11.
22. (canceled)
23. (withdrawn) A motor vehicle part comprising a product according to claim 11.
24. (withdrawn) A structural component in aeronautical construction comprising a product according to claim 11.
25. (withdrawn) A fuselage facing sheet comprising a structural component according to claim 24.
26. (canceled)
27. (withdrawn) A welded construction comprising at least two products according to claim 11 having a yield strength $R_{p0.2}$ in a welded joint between two of said products of at least 200 MPa.
28. (withdrawn) A welded construction according to claim 27, wherein the yield strength $R_{p0.2}$ in the welded joint between two of said products is at least 220 MPa.
29. (withdrawn) A welded construction comprising at least two products according to claim 11 having a fracture strength R_m in the a welded joint between two of said products of at least 250 MPa.
30. (withdrawn) A welded construction according to claim 29, wherein the fracture strength R_m in the welded joint between two of said products is at least 300 MPa.

31. (withdrawn) A welded construction according to claim 27 having a hardness in a heat-affected zone of greater than or equal to 100 HV.
32. (withdrawn) A welded construction according to claim 31, wherein the hardness in the heat-affected zone is at least as great as the hardness of those of the a base sheet that has the lowest level of hardness.
33. (previously presented) A process according to claim 1, wherein heat treatment operations are carried out on-line, without any heat treatments being carried out separately.
34. (previously presented) A process according to claim 1, wherein each step of said process is conducted at a lower temperature than the temperature of a previous step.
35. (new) A process of claim 1 wherein said yield strength $R_{p0.2}$ is at least 290 MPa and said fracture strength R_m is at least 330 MPa.
36. (new) A process of claim 1, wherein Zn : 4.0-6.0%, Mg 0.7-1.5%, Mn<0.60%, Cu <0.25% and wherein a width of the precipitation-free zones at grain boundaries thereof of said laminated product is at least 100 nm.
37. (new) A process of claim 1, wherein Zn : 4.0-6.0%, Mg 0.7-1.5%, Mn<0.60%, Cu <0.25% and wherein $MgZn_2$ type precipitations at grain boundaries of said laminated product have an average size of at least 150 nm.